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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/634,651

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EXAMINER

ECHELMMEYER, ALIX ELIZABETH

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/634,651	Applicant(s) MALSERVISI ET AL.	
	Examiner Alix Elizabeth Echelmeyer	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4,6,7,9,13-18,21-24,26 and 40-59 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 and 44-59 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6,7,9,13-18,21-24,26 and 40-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to the amendment filed June 26, 2008. Claims 13, 14, 18 and 40 have been amended. Claims 1-4 and 44-59 were previously withdrawn. Claims 5, 8, 10-12, 19, 20, 25 and 27-39 were previously cancelled. Claims 6, 7, 9, 13-18, 21-24, 26 and 40-43 are rejected for the reasons given below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9, 13-18 and 40-43 rejected under 35 U.S.C. 103(a) as being unpatentable over Durkot et al. (US 2002/0155352).

Regarding claim 40, Durkot et al. teach an electrochemical cell with an anode comprising zinc alloy particles suspended in a fluid medium (abstract).

The particles have a length to width greater than 5, when the width and length dimension are switched ([0018]). Such a switch is logical, since if the "width" of an object is greater than its "length", then the "width" is essentially the length, and the "length" is the width. Therefore, since 1/0.20, or one (1) over 20%, is equal to 5, and the aspect ratio is less than 20%, it is also greater than 5 when the "width" and "length" dimensions are switched.

As for the particle size distribution limitation of claim 40, it can be seen in Figure 2 that for certain particles at certain sizes, the log-normal slope is 2.

Regarding claim 41, the fluid medium is gelled potassium hydroxide, or KOH ([0003]).

With regard to claims 42 and 43, it is disclosed in Example 1 of Durkot et al. that the battery consists of polyacrylic acid in 0.53 % by weight of the anode, and that the electrolyte, comprising 2% ZnO and 35% KOH, is 30.94% by weight of the anode. Thus, the gelled electrolyte forms 31.47% by weight of the anode. Of that 31.47% by weight, 98% by weight is the 2% ZnO / 35% KOH, and 2% by weight is the polyacrylic acid.

Regarding the solutions of ZnO and KOH, it has been held that when the difference between a claimed invention and the prior art is the range or value of a particular variable, then a prima facie rejection is properly established when the difference in the range or value is minor. Titanium Metals Corp. of Am. v. Banner, 778 F.2d 775, 783, 227 USPQ 773, 779 (Fed. Cir. 1985).

Regarding claim 9, the particles of Durkot et al. may be acicular ([0018]).

As for claims 13-17, the fine zinc alloy particles may have a particle size of 74 μm and the dust zinc alloy particles may have a particle size of 44 μm ([0012], [0013], [0040]). At least 10% of the powder is made up of the dust zinc alloy particles ([0038]). This includes values of 10-19%, or less than 20%.

Regarding claim 18, the “second zinc metal or zinc alloy powder” of the instant claim I considered to be the dust particle, discussed in the previous paragraph. If the

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dust particles are acicular, as disclosed in Durkot et al., then would have a length along one axis at least two times the length in another, or would have an aspect ratio of about 2 ([0018]).

Concerning the length to width ratio of claim 40, Durkot et al. fail to explicitly teach the claimed ratio for the particles. Durkot et al. do teach that the surface area of the particles, which is affected by the ratio of the length to width, is result effective ([0041]). It would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the surface area of the particles, since it is recognized that increased surface area results in more area for reaction. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art (MPEP 2144.05 IIB).

4. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Durkot et al. in view of Urry et al. (WO 98/50969).

The teachings of Durkot et al. as discussed above are incorporated herein.

Durkot et al. teach that zinc powder of the anode of a battery, but fail to teach that the powder granules are teardrop in shape.

Urry et al. teach an electrochemical cell having an anode with zinc powder particles (abstract).

Urry et al. further teach that the particles may be teardrop in shape (page 7 line 16).

As for claim 7, the particles may be 254 μm to 1524 μm (page 4 lines 9-10).

Urry et al. further teach that the shape of the particles in the anode can affect the battery characteristics (page 6 lines 5-15).

It would be advantageous to determine the best shape for the zinc particles of the anode of Durkot et al., such as a teardrop shape, since Urry et al. teach that the shape of the particle can affect the characteristics of the battery.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to determine the best shape for the zinc particles of the anode of Durkot et al., such as a teardrop shape, since Urry et al. teach that the shape of the particle can affect the characteristics of the battery.

5. Claims 21-24 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Durkot et al. in view of Daniel-Ivad et al. (US 7,008,723).

The teachings of Durkot et al. as discussed above are incorporated herein.

Durkot et al. teach the zinc alloy powder in the anode of the battery, but fail to teach that the zinc alloy comprises zinc, bismuth, indium, aluminum or calcium.

Daniel-Ivad et al. teach a zinc alloy for use in the anode of an electrochemical cell (abstract).

The mercury- and lead-free zinc alloys of Daniel-Ivad et al. may include up to 800 ppm indium, up to 500 ppm calcium, up to 500 ppm magnesium, up to 200 ppm bismuth, and up to 200 ppm aluminum (column 4 lines 6-15).

Daniel-Ivad et al. further teach that the zinc alloys mentioned in the previous paragraph may be included in the anode of a battery without the need for environmentally unsafe additives (column 1 lines 54-57, column 3 lines 63-67).

It would be advantageous to use the alloys of Daniel-Ivad et al. in the anode of Durkot et al. since they do not require environmentally unsafe additives, resulting in an environmentally safer battery.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the alloys of Daniel-Ivad et al. in the anode of Durkot et al. since they do not require environmentally unsafe additives, resulting in an environmentally safer battery.

Response to Arguments

6. Applicant's arguments, see Remarks, filed June 26, 2008, with respect to the rejection of claim 40 under Durkot et al. have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made, see above. Specifically, the argument found convincing is on page 11 of the remarks, concerning the length to width ratio taught in Durkot et al.

Applicant's arguments concerning the definition of diameter as "when viewing a cross section of a particle lying on a plane arranged substantially at right angles to the length of the particle, the distance between two points lying on the perimeter which are farthest apart" (see page 9 of the Remarks) have been fully considered but they are not

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persuasive. This “definition” of diameter is not based on the instant specification, and appears to have been designed simply to overcome the teachings of Durkot et al.

Applicant further states, on pages 10-11, that the diameter translates to the “width” and not the “thickness” of the particle. Again, this argument is made to overcome the teachings of Durkot et al. The choosing of the width and thickness, or diameter dimensions is arbitrary. Further, as discussed in the new rejection laid out above, the ratio of length to “width” or “diameter” is result effective, and one of ordinary skill in the art would find it obvious to optimize the relationship in order to find the ideal surface area that Applicant has claimed.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alix Elizabeth Echelmeyer whose telephone number is (571)272-1101. The examiner can normally be reached on Mon-Fri 8-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Susy N. Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Alix Elizabeth Echelmeyer
Examiner
Art Unit 1795

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/SUSY N TSANG-FOSTER/
Supervisory Patent Examiner, Art Unit 1795